

Red Flag Event Summary – National Weather Service Duluth

May 4th, 2018

Bill Leatham, Asst. Fire Weather Program Leader

Geoffrey Grochocinski, Fire Weather Program Leader



Synopsis:

In coordination with the Minnesota and Wisconsin Department of Natural Resources (MN DNR and WI DNR respectively), the National Weather Service (NWS) office in Duluth, MN issued a Fire Weather Watch (Figure 1) for much of northeast MN during the afternoon of Thursday May 3rd. NWS Duluth also issued a Special Weather Statement for near-critical fire weather conditions for area of central and north-central Minnesota and northwest WI. The watch area and Special Weather Statement area in central and northeast MN (all of NWS Duluth's MN territory) was upgraded to a Red Flag Warning (Figure 1) early Friday morning. The warning was issued due to the combination of critically low relative humidity, and gusty west-northwesterly winds.

Weather:

Early on May 4th the Upper Mississippi River Valley was situated between low pressure over the Central Great Lakes and a cold front over Manitoba and Ontario (Figure 2). As the day progressed the cold front slid southeastward through much of Manitoba, western Ontario and northern Minnesota. Ahead of the front there were widespread critical fire weather conditions across the Northland the afternoon of Friday May 4th. It was warm, very dry, and sunny with gusty west-northwest winds. Deep mixing helped draw down very dry air and stronger winds aloft with widespread winds of 10 to 15 mph and gusts of 20 to 30 mph. Relative humidity plummeted to 15 to 20 percent within the warned area. Maximum temperatures ranged from the upper 60s to the middle 70s. MN DNR reported High to Extreme fire danger across all northeast Minnesota counties included in the Red Flag Warning on the 4th (Figure 3). Areas included within the SPS reported a Very High fire danger across all of northwest Wisconsin (Figure 4) per WI DNR.

NWS Services:

- Critical Fire Weather conditions were highlighted in the Hazardous Weather Outlook, Fire Weather Planning Forecast, and on Social Media.
- All of the Duluth County Warning Area was in the Elevated category on the morning issuance of the Storm Prediction Center (SPC) Day 1 Fire Weather Outlook.

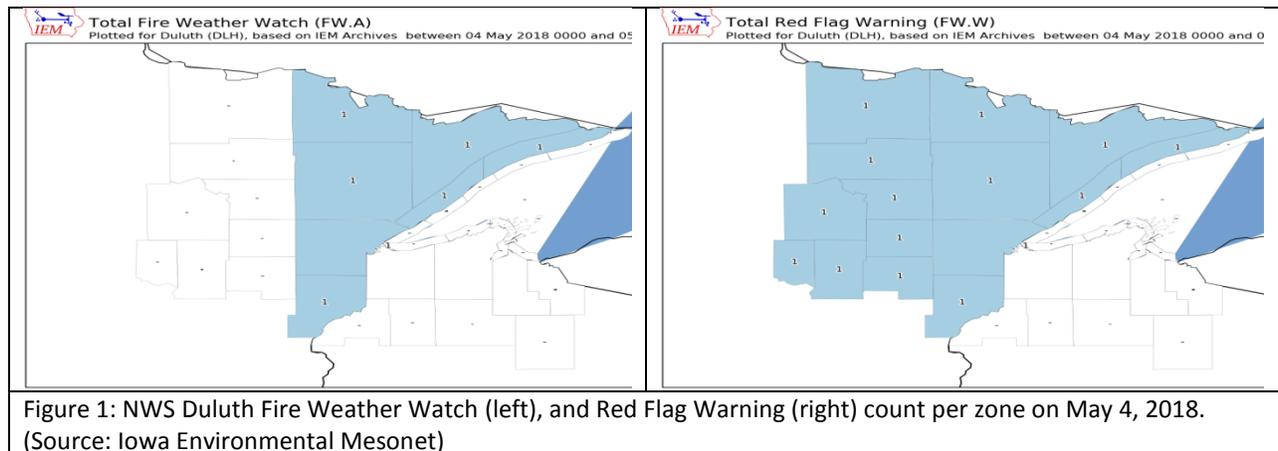
Fires:

- The Minnesota Incident Command Center (MNICS) reported that there were 50+ fires for over 300 acres since May 3rd on the MNICS call on May 7th.

Red Flag Warning, Weather Verification:

Date:	May 4, 2018
Number of Watches Issued:	7
Number of Warnings Issued:	15
Number of Warnings Verified:	15
Number of Misses:	1
Probability of Detection (POD):	0.94
False Alarm Ratio (FAR):	0.00
Average Lead Time:	7.2 hrs

Figures:



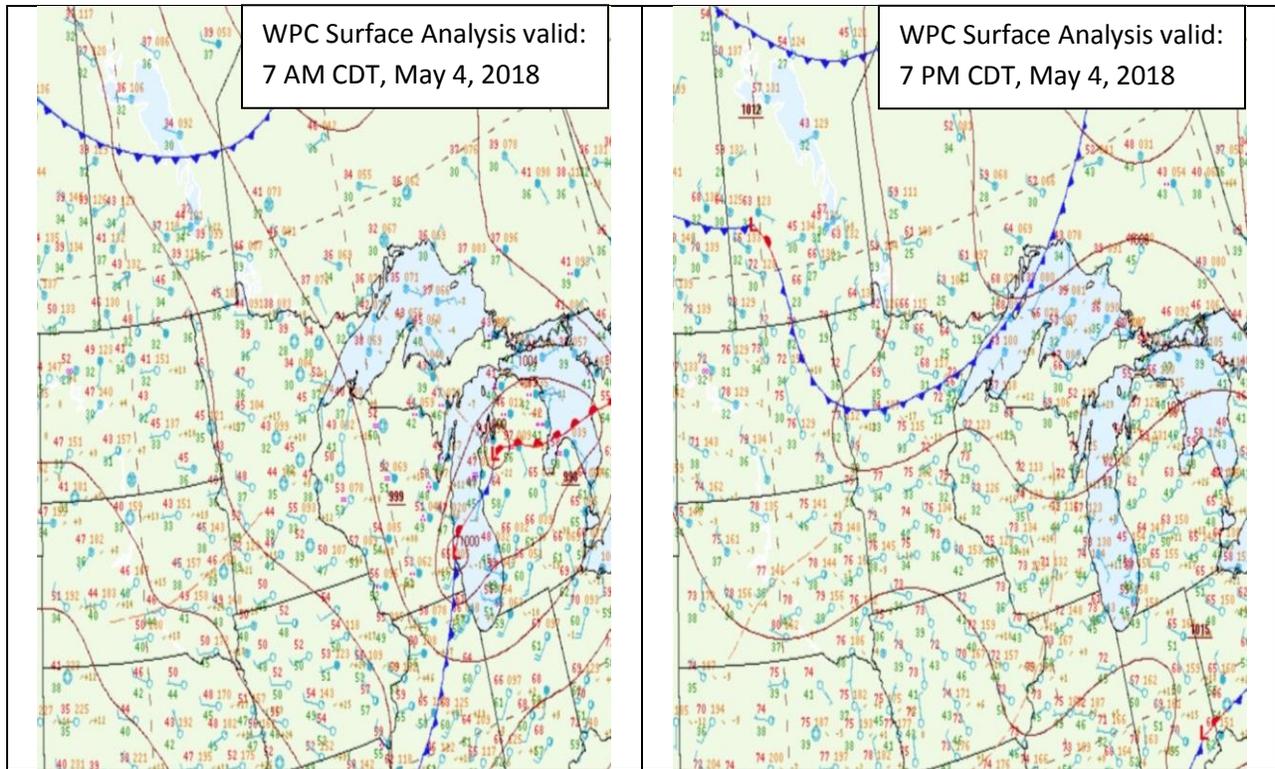


Figure 2: NOAA Weather Prediction Center (WPC) surface analysis valid for May 4, 2018 at 7AM CDT (left), and 7 PM CDT (right).

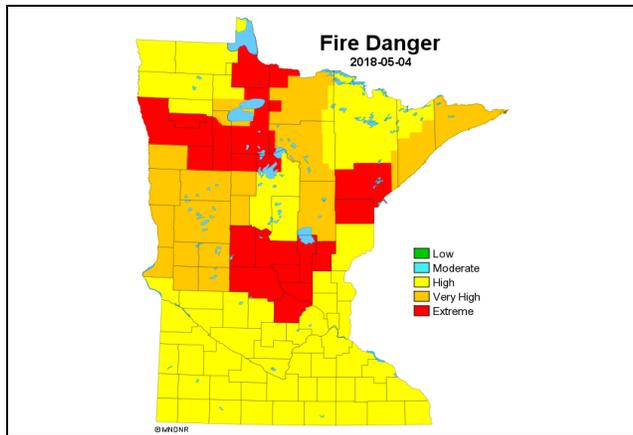


Figure 3: Minnesota Department of Natural Resources Fire Danger for May 4, 2018 (Source: Minnesota Department of Natural Resources)

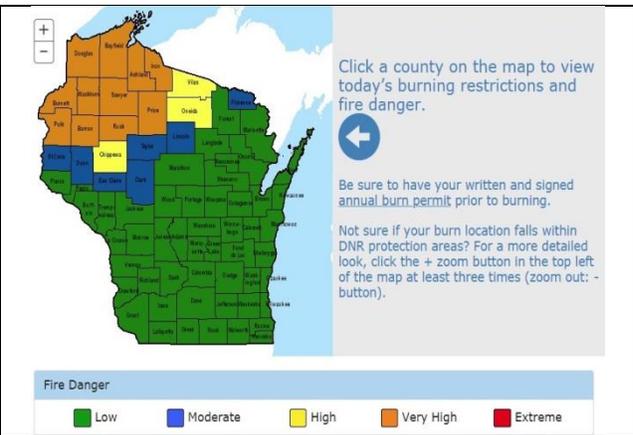


Figure 4: Wisconsin Department of Natural Resources Fire Danger for May 4, 2018 (Source: Wisconsin Department of Natural Resources)